

'395 patent, and claim 1 of the '091 patent were not infringed; and (5) none of the patents-in-suit were anticipated or obvious. (D.I. 212.) The jury awarded EMC \$585,783.00 in damages. (D.I. 212.) The court entered judgment on the verdict on May 22, 2015. (D.I. 213.) Presently before the court are the parties' post-trial motions: (1) Zerto's Motion for a Finding that U.S. Patent Nos. 7,577,867, 7,603,395 and 7,791,091 are Unenforceable Due to Inequitable Conduct (D.I. 240);¹ (2) Zerto's Motion for a New Trial, and to Alter or Amend the Judgment, Due to an Inconsistent Verdict (D.I. 232); (3) Zerto's Renewed Motion for Judgment as a Matter of Law (D.I. 230); (4) EMC's Renewed Motion for Judgment as a Matter of Law (D.I. 219); (5) EMC's Motion for Permanent Injunction (D.I. 226); and (6) EMC's Motion to Amend the Judgment (D.I. 223).

II. BACKGROUND OF THE TECHNOLOGY

The patents-in-suit relate to the field of data protection. The '460 patent is entitled "Method and Apparatus for Implementing a Remote Mirroring Data Facility Without Employing a Dedicated Leased Line to Form the Link Between Two Remotely Disposed Storage Devices." The '460 patent discloses a data protection system in which two storage systems are connected via at least one communication link. '460 patent at Abstract. As data is written to the source storage device, it is also written and mirrored to the target storage device. '460 patent at 1:40–42. This provides a backup in case the source storage device fails or is destroyed. *Id.* at 1:27–35.

The '395 and '091 patents (collectively, "the Rokicki patents") share a common specification. The '395 patent is entitled "Using Pseudosnapshots for Continuous Data Protection Systems to Surface a Copy of Data." The '091 patent is entitled "Network Configuration Backup and Restore Operations Using Continuous Data Protection." They relate to "systems and

¹ The parties did not present the issue of inequitable conduct to the jury, but agreed for the court to decide the issue based on their briefs.

methods for performing replication operations on a continuous data protection system.” ’395 patent at 1:21–23. The patents disclose a continuous data protection (“CDP”) engine that “performs a continuous series of write operations,” creating and storing a copy of data whenever it is written. *Id.* at 2:25–27. The user can use “the CDP engine to access stored data as it appeared at a given point in time in the past.” *Id.* at 2:29–30.

The ’867 patent is entitled “Cross Tagging to Data for Consistent Recovery.” It discloses a system for consistent, uninterrupted data recovery. ’867 patent at 2:31–34. The system quiesces (*i.e.*, halts) control host applications at a common time interval, and uses tags to mark those time points in a journal of write transactions. *Id.* at 2:14–15; 7:30–36. The system can use the tags to recover the data as it existed when the applications were quiesced. *Id.* at 6:21–24.

III. STANDARD OF REVIEW

A. Renewed JMOL Motions

To prevail on a renewed motion for judgment as a matter of law following a jury trial and verdict, the moving party “‘must show that the jury’s findings, presumed or express, are not supported by substantial evidence or, if they were, that the legal conclusion(s) implied [by] the jury’s verdict cannot in law be supported by those findings.’” *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1348 (Fed. Cir. 1998) (quoting *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893 (Fed. Cir. 1984)). “Substantial evidence” is defined as “such relevant evidence from the record taken as a whole as might be accepted by a reasonable mind as adequate to support the finding under review.” *Perkin-Elmer Corp.*, 732 F.2d at 893.

The court should only grant the motion “if, viewing the evidence in the light most favorable to the nonmovant and giving it the advantage of every fair and reasonable inference, there is insufficient evidence from which a jury reasonably could find liability.” *Lightning Lube, Inc. v.*

Witco Corp., 4 F.3d 1153, 1166 (3d Cir. 1993) (citing *Wittekamp v. Gulf Western Inc.*, 991 F.2d 1137, 1141 (3d Cir. 1993)). “In determining whether the evidence is sufficient to sustain liability, the court may not weigh the evidence, determine the credibility of witnesses, or substitute its version of the facts for the jury’s version.” *Lightning Lube*, 4 F.3d at 1166 (citing *Fineman v. Armstrong World Indus., Inc.*, 980 F.2d 171, 190 (3d Cir. 1992)). Rather, the court must resolve all conflicts of evidence in favor of the nonmovant. *Williamson v. Consol. Rail Corp.*, 926 F.2d 1344, 1348 (3d Cir. 1991); *Perkin-Elmer Corp.*, 732 F.2d at 893.

“The question is not whether there is literally no evidence supporting the party against whom the motion is directed but whether there is evidence upon which the jury could properly find a verdict for that party.” *Lightning Lube*, 4 F.3d at 1166 (quoting *Patzig v. O’Neil*, 577 F.2d 841, 846 (3d Cir. 1978)). In conducting such an analysis, “the court may not determine the credibility of the witnesses nor ‘substitute its choice for that of the jury between conflicting elements of the evidence.’” *Syngenta Seeds, Inc. v. Monsanto Co.*, 409 F. Supp. 2d 536, 539 (D. Del. 2005) (quoting *Perkin-Elmer Corp.*, 732 F.2d at 893).

B. Motion for a New Trial

Pursuant to Federal Rule of Civil Procedure 59, a court may grant a new trial “for any of the reasons for which a new trial has heretofore been granted in an action at law in federal court.” Fed. R. Civ. P. 59(a)(1)(A). The decision to grant or deny a new trial is within the sound discretion of the trial court. *See Allied Chem. Corp. v. Daiiflon, Inc.*, 449 U.S. 33, 36 (1980). In making this determination, the trial judge should consider the overall setting of the trial, the character of the evidence, and the complexity or simplicity of the legal principles which the jury had to apply to the facts. *Lind v. Schenley Indus., Inc.*, 278 F.2d 79, 89 (3d Cir. 1960). Unlike the standard for determining judgment as a matter of law, the court need not view the evidence in the light most

favorable to the verdict winner. *Allied Chem. Corp.*, 449 U.S. at 36. A court should grant a new trial in a jury case, however, only if “the verdict was against the weight of the evidence . . . [and] a miscarriage of justice would result if the verdict were to stand.” *Williamson*, 926 F.2d at 1352.

IV. DISCUSSION

Having considered the substantial evidence in the record, the parties’ post-trial submissions, and the applicable law, the court will partially grant EMC’s Renewed JMOL Motion and EMC’s Motion to Amend the Judgment, and deny the rest of the post-trial motions. The court’s reasoning follows.

A. Zerto’s Motion for a Finding that the ’867, ’395 and ’091 Patents Are Unenforceable Due to Inequitable Conduct

Zerto argues that the ’867, ’395, and ’091 patents are unenforceable due to inequitable conduct before the Patent and Trademark Office (“PTO”). A determination of inequitable conduct is committed to the discretion of the district court. *Kingsdown Med. Consultants, Ltd. v. Hollister Inc.*, 863 F.2d 867, 876 (Fed. Cir. 1988) (*en banc*). As a general matter, patent applicants and their attorneys have a duty of candor, good faith, and honesty in their dealings with the PTO. 37 C.F.R. § 1.56(a). The court may find inequitable conduct where a party breaches that duty. *Id.* “Inequitable conduct can consist of affirmative misrepresentations of material fact, submission of false material information, or the failure to disclose known material information during the prosecution of a patent, coupled with the intent to deceive the PTO.” *Life Techs., Inc. v. Clontech Labs., Inc.*, 224 F.3d 1320, 1324 (Fed. Cir. 2000). A finding of inequitable conduct renders the entire patent unenforceable. *Kingsdown*, 863 F.2d at 877.

Intent and materiality are separate requirements that must be proved by clear and convincing evidence. *Life Techs.*, 224 F.3d at 1324. The evidence must show but-for materiality,

which means “the PTO would not have allowed a claim had it been aware of the undisclosed prior art.” *Am. Calcar, Inc. v. Am. Honda Motor Co.*, 651 F.3d 1318, 1334 (Fed. Cir. 2011). The only exception to but-for materiality is a case of affirmative egregious conduct. “When the patentee has engaged in affirmative acts of egregious misconduct, such as the filing of an unmistakably false affidavit, the misconduct is material.” *Therasense, Inc. v. Bechton, Dickinson & Co.*, 649 F.3d 1276, 1292 (Fed. Cir. 2011). Deceptive intent may be inferred from circumstantial evidence only if deceit is the single most reasonable inference available. *Id.*

1. Mr. Walsh and the '867 Patent

Zerto argues that the '867 patent is unenforceable due to the actions of Mr. Edmund Walsh, EMC's counsel during *Inter Partes* Review (“IPR”). The '867 patent was originally filed by Kashya Inc. in February 2006, and was purchased by EMC in May of that same year. (Tr. at 752:20–757:13.) According Zerto, the '867 patent was drafted to cover a Kashya product called the KBX4000.² (*Id.* at 751:10–769:2.) Zerto filed a Petition for IPR of the '867 patent in July 2013, asserting that the patent was anticipated by the 2004 Kashya KBX4000 Administrator's Guide (“Administrator's Guide”). (D.I. 242, Ex. D at 41–44.) The version of the Administrator's Guide that Zerto submitted to the Patent Trial and Appeals Board (“PTAB”) contained a 2013 copyright date, indicated it was “confidential and proprietary,” and included internal tracked changes. (*Id.*, Ex. E.) Based on these observations, Mr. Walsh argued in EMC's Preliminary Response that the Administrator's Guide was not a printed publication from 2004, but more likely “was recently printed from an electronic file consisting of an internal *draft*.” (*Id.*, Ex. F at 34 (emphasis in original).)

² EMC disagrees, claiming that the '867 patent was drafted to cover a later Kashya product, the KBX5000, which is not prior art to the '867 patent. (D.I. 271 at 16–17.) For the purposes of this ruling, it is irrelevant whether the '867 patent was drafted to cover the KBX4000 or the KBX5000.

In response, Zerto sent Mr. Walsh a letter demanding it either disclose its copies of Administrator's Guide to the PTAB, or recant its argument that the Administrator's Guide was not prior art "because EMC knew that the copy of the Administrator's Guide submitted to the PTO was, in all material respects, an identical copy of prior art manuals in EMC's possession." (D.I. 241 at 6.) Mr. Walsh did not investigate Zerto's allegations and refused to comply with Zerto's request. (D.I. 272, Ex. B; D.I. 242, Ex J. at 26:9–11.) Zerto consequently requested a conference with the PTAB to resolve the dispute.

The PTAB held a conference call with the parties on December 19, 2013. During the call, Zerto requested authorization "to file a short statement, as well as an affidavit, to support its position that [the Administrator's Guide] qualifies as a prior art printed publication." (*Id.*, Ex C at 2.) Zerto argued that there was no dispute about the prior art status of the Administrator's Guide, and that it "was unable to obtain a true copy of [the Administrator's Guide] from Patent Owner." EMC responded that Zerto had failed "to establish that there is a reasonable likelihood that [the Administrator's Guide] is a prior art printed publication," and further, "it had no responsibility to help" Zerto meet its burden of proof. (*Id.*, Ex. C at 2–3.) The PTAB agreed with EMC, and in its order stated that Zerto "did not direct us to credible or sufficient authority that supports its argument that Patent Owner has a responsibility to help Petitioner satisfy that burden." (*Id.*, Ex. C at 3.) Subsequently, the PTAB denied Zerto's Petition, in part because it was unpersuaded "that Petitioner has established sufficiently that [the Administrator's Guide] qualifies as a prior art printed publication." (D.I. 242, Ex C at 25–28.)

Eventually, during discovery for this case, Zerto acquired a copy of the Administrator's Guide with a 2004 copyright date that, though not identical, was substantially the same as the document with a 2013 copyright date. (*See id.*, Ex. I.) Zerto now requests the court to hold the

'867 patent unenforceable based on Mr. Walsh's representations. Because EMC had the 2004 version of the Administrator's Guide in its possession, Zerto argues that Mr. Walsh misled the PTAB by arguing that the document was not prior art. Zerto asserts that by making those arguments, Mr. Walsh violated his duty of candor and duty to conduct a reasonable investigation.

As an initial matter, the court notes that questions remain regarding the public availability of the Administrator's Guide. Even the earlier-dated copy of the Guide contains some evidence that it was not a public document.³ Additionally, Zerto's CEO Mr. Ziv Kedem was both an inventor on the '867 patent and a co-founder and high-ranking executive of Kashya. He certainly would have been aware of the Administrator's Guide, but he certified to the PTO that he did not believe the invention was "described in any printed publication in any country." (D.I. 272, Ex. Z at EMC_0184175.) Mr. Z. Kedem's representations before the PTO weigh in favor of an inference that the Administrator's Guide was not publically available.

But even assuming the Administrator's Guide was prior art to the '867 patent, the PTAB did not seem to find Mr. Walsh's actions misleading. Mr. Walsh only made factual statements to the PTAB—statements that Zerto contends were calculated to deceive. Appropriately, Zerto raised its complaints with Mr. Walsh before the PTAB. Squarely presented with this issue, the PTAB found that EMC did not have a duty to assist Zerto in meeting its burden. In other words, Mr. Walsh had done nothing wrong.

The court recognizes that in some circumstances, factual statements can be used to mislead a finder of fact. The court does not want to encourage attorneys to engage in such misbehavior. But the court is also unwilling to insert itself into the PTAB's management of its own cases. After all, the PTAB has the best idea of what is required by the duty of candor. The PTAB was fully

³ The Administrator's Guide with the 2004 copyright is labeled "Final Draft," contains a notice it is "confidential and proprietary," and contains at least one internal comment.

appraised of, and unconcerned by, the conduct which is the basis of this allegation of inequitable conduct. Having failed to satisfy the PTAB's burden, Zerto cannot now convince the court to nullify the patents based on behavior the PTAB apparently did not find inappropriate. Therefore, the court denies Zerto's motion as to the '867 patent.

2. Ms. Jones and the '395 and '091 Patents

Zerto alleges that the '395 and '091 patents are unenforceable because of the actions of Ms. Sara Jones, EMC's attorney during prosecution of the Rokicki patents. Zerto asserts that she willfully failed to disclose two prior art references to the PTO. The Rokicki patents share nearly identical specifications and were both filed in May 2006. The '395 patent issued on October 13, 2009, and the '091 patent issued on June 28, 2011. Zerto characterizes the invention as a combination of a backup and recovery program called NetWorker with a CDP system supplied by a vendor called Mendocino. EMC obtained NetWorker, which used traditional snapshot technology, from a third party called Legato. (D.I. 242, Ex. M at 13:17–14:10; 12:18–22:13.)

Even though Mendocino and NetWorker were prior art to the Rokicki patents,⁴ Ms. Jones did not explicitly disclose them as prior art, or identify them in an Information Disclosure Statement. The references were indirectly disclosed in transcripts which Ms. Jones submitted in an attempt to establish an earlier date of invention for the '091 patent. They were not submitted in regards to the related application for the '395 patent.

These transcripts memorialize several conversations between Ms. Jones and two of the inventors. For example, Exhibit D to the PTO filing is a copy of the transcript of the June 13, 2005 meeting Ms. Jones had with the inventors. (*Id.*, Ex. P at EMC_0116948.) That meeting begins with the statement, "So we're taking the CDP technology that's been done by the group in

⁴ EMC disputes whether Mendocino was actually prior art.

Massachusetts and combining that with our NetWorker infrastructure so that we have a CDP solution for NetWorker.” Ms. Jones asks for the name of the supplier for the CDP, and the inventor replies, “The name of the company is Mendocino. (*Id.*, Ex. P at EMC_0116949.) In the transcript for a meeting on July 10, 2008, the inventors explained that EMC was “creating a hardware/software infrastructure that surrounds the CDP engine” that EMC obtained from Mendocino. (*Id.*, Ex. P at EMC_0116949.) The inventors expressed some doubts as to whether their new system would be patentable, as the Mendocino product was central to the invention. (*Id.*, Ex. P at EMC_0116931, EMC_0116964.) Ms. Jones testified that it was not her practice “to withhold material information from the PTO,” that she did not recall withholding any material information from the PTO during prosecution of the Rokicki patents, and that she did not intend to deceive the PTO. (D.I. 272, Ex. M at 121:8–22:15.)

Although Ms. Jones did not disclose NetWorker and Mendocino in an Information Disclosure Statement, the references were undoubtedly in front of the Patent Examiner. The Examiner performed a “thorough review” of the transcripts and found them insufficient to swear behind a different prior art reference. (*Id.*, Ex. H at EMC_185228.) Even though the Examiner was considering the issue of conception, he did not lose the ability to consider that things mentioned in those transcripts may be relevant prior art. The references to Mendocino and NetWorker were not buried in the transcripts. The court cannot know what was in the Examiners’ mind, but the disclosure of the transcripts cuts against a finding of inequitable conduct.

Further, Zerto has the burden of proving, by clear and convincing evidence, that Ms. Jones acted with the intent to deceive the PTO. The court does not find that such intent clearly existed here. EMC argues that the Mendocino and NetWorker references were not material, but does not directly explain why Ms. Jones did not disclose them to the PTO. Counsel for Zerto apparently

never questioned her directly about the references. Ms. Jones stated in her deposition that she believed she would have submitted any references that the inventors identified as material. To conclude that Ms. Jones committed inequitable conduct, the court must infer that malicious intent is clearly the only reasonable inference. But if Ms. Jones intended to deceitfully hide Mendocino and NetWorker from the PTO, it does not follow that she would disclose transcripts that repetitively mention those very references. This weighs against a finding that Ms. Jones acted with the intent to deceive the PTO. The standard of clear and convincing evidence is a high one, and Zerto has failed to meet it. The court denies Zerto's motion as to the '395 and '091 patents.

B. Zerto's Motion for a New Trial Due to an Inconsistent Verdict

Zerto alleges the jury verdict was inconsistent in four areas. First, the jury found that Zerto directly infringed claim 45 of the '867 patent, but that Zerto's customers did not. Second, the jury found that Zerto had contributed to, but had not induced, its customers' direct infringement of the '460, '395, and '091 patents. Third, the jury found that Zerto's customers did not directly infringe independent claims 1, 42, or 44 of the '460 patent, but directly infringed claim 38. Finally, the jury found that Zerto infringed the dependent claims, but not the independent claims, of the '395 and '091 patent.

The Third Circuit has outlined four ways that a district court may approach an inconsistent verdict: (1) allow the inconsistent verdict to stand; (2) read the verdict in a manner that will resolve the inconsistencies; (3) resubmit the question to the jury; or (4) "if verdicts are genuinely inconsistent and if the evidence might support either of the 'inconsistent' verdicts, the appropriate remedy is ordinarily . . . not simply to accept one verdict and dismiss the other, but to order an entirely new trial." *Mosley v. Wilson*, 102 F.3d 85, 90–91 (3d Cir. 1996) (quoting *Los Angeles v. Heller*, 475 U.S. 796, 806, 106 S.Ct. 1571, 1577, 89 L.Ed.2d 806 (1986) (Stevens, J. dissenting)).

The failure to object to an inconsistency in a general verdict before the jury is discharged results in a waiver of the objection. *Frank C. Pollara Grp., LLC v. Ocean View Inv. Holding, LLC*, 784 F.3d 177, 190–91 (3d Cir. 2015). The same is true for a failure to object to the jury instructions and verdict form that authorize inconsistent findings. *Id.* at 91 n.19.

The verdict form in this case is best categorized as a general verdict form with special questions. *See* Fed. R. Civ. P. 49(b)(1); *Ocean View*, 784 F.3d at 190 (discussing differences between general and special verdict). Because Zerto did not raise the issue of inconsistency before the jury was dismissed, the issue has been waived. This waiver is unfortunate because of the obvious and irreconcilable inconsistency of some portions of the jury verdict. To illustrate the issue, the court focuses on Zerto’s fourth objection.⁵ The jury ruled that dependent claims of the Rokicki patents were infringed, but that independent claims were not infringed. This is legally unsupportable. The court correctly instructed the jury that if “an Asserted Claim on which other claims depend is not infringed, there cannot be infringement of any dependent claim that refers directly or indirectly to that independent claim.” (D.I. 208 at 24.)

EMC ignores this inconsistency by cleverly erasing much of the jury’s verdict. EMC alleges that the jury did not decide whether Zerto’s customers infringe: (1) claims 1, 42, and 44 of the ’460 patent, (2) claims 1 and 8 of the ’395 patent, or (3) claim 1 of the ’091 patent. The court will illustrate EMC’s logic using the instructions for the ’395 patent. The verdict form asks, “Has EMC proven, by a preponderance of the evidence, that at least one of Zerto’s customers has directly infringed any Asserted Claim of the ’395 patent? Checking “yes” below indicates a finding for EMC. Checking “no” below indicates a finding for Zerto.” (D.I. 212 at 5.) The jurors checked “Yes.” Below, the form reads, “If you answered “Yes,” please mark the claim(s) you found to be

⁵ Because the issue is waived, the court does not address here the legitimacy of other Zerto’s allegations of inconsistency.

infringed,” and provides blanks for the jurors to mark beside claim 1, claim 2, and claim 8. The jurors marked only claim 2.

Logically, the absence of check marks next to claim 1 and claim 8 indicates that the jury decided against EMC on those issues, and found that Zerto did not infringe claims 1 or 8. EMC does not accept this simple interpretation, and instead argues that the absence of marks beside claims 1 and 8 indicates the jurors *did not decide* whether those claims were infringed. This is an argument only a lawyer could love. EMC imagines that the jury, after listening to nine days of complex testimony on fourteen different claims, simply decided not to address whether almost half of those claims were infringed. The court will not engage in such divination. To the extent that EMC implies a latent ambiguity in the jury form, that objection is waived at this late stage.

Zerto’s waiver places the court in the uncomfortable position of allowing a logically incomprehensible verdict to stand. Ideally, the court would order a new trial in spite of the waiver. A district court may, sua sponte, order a new trial for any reason that would justify a new trial upon a party’s motion. Fed. R. Civ. P. 59(d). But the court’s discretion is limited to a window of 28 days after the entry of judgment. Fed. R. Civ. P. 59(d). After that time frame has passed, the court no longer has the authority to grant a new trial on its own initiative. *See Lesende v. Borrero*, 752 F.3d 324, 334–35 (3d Cir. 2014) (“Because the District Court failed to enter its memorandum opinion within twenty-eight days of the entry of judgment, it lacked jurisdiction under the first sentence of Rule 59(d) to consider the propriety of a new trial on liability on its own accord.”). The 28-day window has long passed, and the court cannot exceed its jurisdictional authority.⁶ The jury verdict, though flawed, must stand.

⁶ The court recognizes its share in the blame in failing to recognize the inconsistency. Plainly, *someone* should have noticed and taken timely action to remedy the glaring inconsistencies in the jury verdict.

C. Renewed JMOL Motions

A patent infringement analysis entails two steps: “(1) claim construction to determine the scope of the claims, followed by (2) determination of whether the properly construed claim encompasses the accused device.” *Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998) (citations omitted). The first step, claim construction, is a matter of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372, 116 S.Ct. 1384, 1387, 134 L.Ed.2d 577 (1996). The second step, determination of infringement, is a question of fact for the jury. *Bai*, 160 F.3d at 1353. A patentee must establish literal infringement by a preponderance of the evidence. *Braun Inc. v. Dynamics Corp.*, 975 F.2d 815, 819 (Fed. Cir. 1992). “To establish literal infringement, every limitation set forth in a claim must be found in [the] accused product, exactly.” *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1575 (Fed. Cir. 1995). “The scope of a patent is not limited to its literal terms but instead embraces all equivalents to the claims described.” *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 732, 122 S.Ct. 1831, 1837, 152 L.Ed.2d 944 (2002).

Proving that a patent is invalid based on anticipation “requires that the four corners of a single, prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation.” *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000). A patent is invalid for obviousness “if the differences between the subject matter sought to be patented and the prior art such that the subject matter as a whole would have been obvious to a person having ordinary skill in the art.” 35 U.S.C. § 103. The jury must consider four issues: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed subject matter and the prior art; and (4) secondary considerations of non-

obviousness, such as commercial success and long felt but unsolved need. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966). Because a patent as a whole is entitled to the presumption of validity, an accused infringer seeking to prove that a patent is anticipated or obvious must do so by clear and convincing evidence. *State Contracting & Eng'g Corp. v. Condotte Am. Inc.*, 346 F.3d 1057, 1067 (Fed. Cir. 2003).

EMC moves for judgment as a matter of law on infringement of claims 1, 42, and 44 of the '460 patent, claim 1 of the '395 patent, and claim 1 of the '091 patent. Zerto seeks judgment as a matter of law on invalidity of the '460 patent, and noninfringement of claim 38 of the '460 patent, claim 2 of the '395 patent, claim 5 of the '091 patent, and claim 45 of the '867 patent. The court finds that substantial evidence supports many of both parties' positions when viewed in isolation. Examined as a whole, this leads to several inconsistent and conflicting results. For some patents, the jury seemed to credit both Zerto's and EMC's theories of the case, even where those theories stood in direct opposition. The strangeness of the ensuing final results highlight the difficulty raised by the verdict's inconsistency. As discussed *supra* IV.B., the court cannot grant judgment as a matter of law solely based on inconsistency. *See Mosley*, 102 F.3d at 91. The court also lacks jurisdiction to grant a new trial on that basis.

The court cannot substitute its own judgment in place of the jury's where there is evidence supporting the jury's decision. Having considered the evidence on record, the parties' post-trial submissions, and the applicable law, the court denies Zerto's renewed motion for judgment as a matter of law, and grants EMC's motion only as to the '091 patent. The court's reasoning follows.

1. EMC's JMOL Motion for Infringement and Zerto's JMOL Motion for Noninfringement of the '460 Patent

The jury found contributory infringement of claim 38, but no infringement of claims 1 and 44 of the '460 patent. Zerto argues that the evidence did not support a finding of contributory infringement of claim 38. EMC argues that the evidence should have compelled a reasonable jury to find contributory infringement of claims 1 and 44. The contested issues are the same for the three claims: whether Zerto Virtual Replication ("ZVR") software meets the "mirror" limitation; whether ZVR satisfies the "storage system" limitation; and whether Zerto had the knowledge necessary for contributory infringement. The court analyzes each in turn.

a. "Mirror" Limitation

The court construed "mirror" in the context of claim 1 to mean "maintain a continually updated copy of data that exists on a first storage system on a second storage system by creating, in essentially real-time, an identical copy of at least some of the information written from the CPU to the first storage system in the second storage system."⁷ (D.I. 144 at 4.)

Zerto presented evidence that ZVR software does not meet the "mirror" limitation. Zerto's expert, Dr. Zadok, argued that the court's construction requires the system to create an identical copy of data in the second storage system. (Tr. at 1121:4–14.) Zerto's theory is that its system does not satisfy the court's construction for mirror because there is no "continually updated copy of data." Dr. Zadok explained that every individual write that is written to the protected storage system is copied to a second site, where it is stored in a chronological journal. (*Id.* at 1109:19–1111:25.) The journal is not a "copy" of anything that exists on the protected site, and although

⁷ The court disagrees with Zerto's assertion that it did not construe "mirroring" as used in claim 38. Zerto concedes that claim 1 and claim 38 "cover the same thing," and both are directed to "a controller that mirrors information from the CPU to the second storage system." (D.I. 233 at 10.) Although the language of the two claims is not identical, the spirit of the court's construction of "mirror" for claim 1 applies equally to claim 38.

each individual write is a copy, it is not a copy that is continually updated. (*Id.* at 321:13–25, 1126:7–1127:14.)

EMC, on the other hand, presented evidence through its expert, Mr. Jestice, that ZVR software mirrors because it makes an identical copy of *each write* that a protected virtual machine generates, and sends the copied write to the replication site. (*Id.* at 301:7–15, 301:23–302:10.) Mr. Jestice also testified that the court’s construction did not require the data to be stored in a particular format. (*Id.* at 549:23–553:5.) Rather, Mr. Jestice argues that the court’s construction only requires the creation of an identical copy of the information in the first storage system.

A jury could have reasonably credited EMC’s arguments that simply copying and sending each write qualifies as mirroring. A jury also could have reasonably accepted Zerto’s arguments that copying data in real time is not mirroring. Therefore, there substantial evidence supports both Zerto and EMC on the “mirror” limitation.

b. “Storage System” Limitation

The court construed “storage system” to mean “the set of components that stores and controls the storage of information written from the CPU, including one or more storage devices and one or more controllers.” (D.I. 144 at 1.) Dr. Zadok testified that the replication from the protected site to the recovery site takes place many layers above, and separate from, the host computer where the physical CPU is located. (Tr. at 1109:19–1111:25.) Therefore, according to Zerto, ZVR software does not meet this claim limitation. In contrast, Mr. Jestice argued that a virtual machine qualifies as a CPU, and that there is no material difference between managing the replication of data from a protected virtual machine and controlling the storage of information written from a CPU. (*Id.* at 284:12–15, 287:1–13.) Based on this, EMC claims that the ZVR software clearly satisfies the “storage system” limitation.

The parties did not ask the court to determine whether the claim language limits a CPU to a physical CPU. The jury could have concluded that the “storage system” limitation was not satisfied based on Dr. Zadok’s description of the virtual machine operating separately from the CPU. Or, the jury could have credited Mr. Jestice’s assertions that the CPU in the claim included a virtual CPU in one of the virtual machines. The evidence supports both Zerto and EMC as to the “storage system” element.

Because the evidence supports the jury’s verdict of noninfringement of claims 1 and 44, the court denies EMC’s motion as to infringement of the ’460 patent.

c. Contributory Infringement

The only issue remaining is whether Zerto contributed to its customers’ infringement of claim 38. Contributory infringement requires a finding that Zerto knew its software was especially made to infringe claim 38. Substantial evidence supports the jury’s conclusion. EMC presented evidence that Zerto knew of the patent at least as of service of the amended complaint in August 2013. (Tr. at 240:22–25.) As a rebuttal, Mr. Z. Kedem testified that Zerto did not think it infringed the patents-in-suit. (*Id.* at 865:4–9, 921:7–9.) The jury reasonably could have disregarded Mr. Z. Kedem’s testimony and found that Zerto knew its software infringed claim 38.⁸ Therefore, the court denies Zerto’s motion as to noninfringement of the ’460 patent.

2. Zerto’s JMOL Motion for Invalidity of the ’460 Patent

There is substantial evidence on the record that supports the jury’s finding that the Zarrow reference does not anticipate the ’460 patent. Mr. Jestice explained that the court’s construction of “storage system” required the storage system components to be separate from the CPU. (Tr. at 1605:23–1606:4.) He testified that Zarrow does not anticipate this limitation because Zarrow

⁸ Zerto also argues that EMC improperly instructed the jury on the standard for contributory infringement. Because Zerto did not object to this allegedly erroneous statement during trial, it has waived the argument.

discloses a host-based mirroring system in which the same CPU both generates data to be mirrored and performs the mirroring operation. (*Id.* at 1604:1–13.) A jury could reasonably rely on Mr. Jestice’s testimony to find that Zarrow does not invalidate the ’460 patent.

There is also substantial evidence on the record that supports the jury’s finding that the Bergsten reference does not render the ’460 patent anticipated or obvious. The parties’ experts disputed whether Bergsten disclosed a “network cloud.” Mr. Jestice testified that a person of ordinary skill in the art would not have understood the LAN disclosed in Bergsten to be a “network cloud.” (*Id.* at 1611:19–1612:12, 1614:25–1616:22, 1618:22–25.) Mr. Jestice provided sufficient evidence upon which the jury could rely to find that Bergsten does not invalidate the ’460 patent.

There is substantial evidence on the record that supports the jury’s finding that combining Zarrow and Yanai does not render the ’460 patent obvious. Mr. Jestice asserted that a person of ordinary skill in the art would not have combined the references because Zarrow did not disclose that its network provides cost savings or redundancy, Yanai taught away from host-based mirroring systems, and Yanai teaches a technique for achieving redundancy. (*Id.* at 1606:16–1610:17.) The jury could have accepted Mr. Justice’s testimony over that of Dr. Zadok to conclude the asserted claims are not obvious. Accordingly, the court denies Zerto’s motion as to the invalidity of the ’460 patent.

3. EMC’s JMOL Motion for Infringement and Zerto’s JMOL Motion for Noninfringement of the ’395 Patent

The jury found that Zerto contributorily infringed dependent claim 2 of the ’395 patent, but did not infringe independent claim 1. Zerto requests judgment of noninfringement as to claim 2, and EMC requests judgment of infringement as to claim 1. The parties dispute three issues:

whether ZVR meets the “quiescent state” limitation; whether ZVR meets the “GUI” limitation; and whether Zerto contributorily infringed the patent.

a. “Quiescent State” Limitation

The court construed “quiescent state” to mean “an inactive state wherein the production application does not generate write operations.” (D.I. 144 at 13.) This limitation covers “a replication application configured to . . . create at least one event marker . . . wherein at least one pseudosnapshot corresponds to a quiescent state.” The parties, and their experts, disagree on the scope of this limitation. Zerto argues the limitation requires at least one customer to use the ZVR product with the VSS Agent software in a manner that placed a production application into a quiescent state. Zerto asserts that EMC failed to provide any evidence that this occurs. EMC argues the claim limitation is satisfied by the ZVR software itself, because it is configured to create event markers when a production application is in a quiescent state.

Lacking more detailed instruction from the court, the jury could have credited the theory of either expert. But even if the jury had adopted Zerto’s more restrictive reading of the claim language, the evidence clearly shows that at least one Zerto customer infringed the “quiescent state” limitation. EMC produced evidence that VSS-aware applications do not generate write operations (i.e., quiesce) after receiving instructions to prepare for backup. Mr. Jestice showed the jury Zerto technical documents that state that VSS causes applications to quiesce. (Tr. 355:2–9; PTX-0037 at EMC_7162.) He also described Microsoft technical documents that explain how VSS instructs applications to enter a quiescent state. (*Id.* at 356:1–357:22.) The record shows that at least one Zerto customer, Rapidparts, used the VSS Agent to generate VSS checkpoints for its virtual machine. (*Id.* at 373:24–374:19.) There is insufficient evidence to support Zerto’s assertion that the “quiescent state” limitation is not met.

b. “GUI” Limitation

The parties dispute the meaning of the phrase “at least one pseudosnapshot is viewed by the user as a snapshot in a graphical user interface.” Again, the jury was free to listen to the experts battle over the plain meaning of the phrase. Mr. Jestice and the inventor, Mr. Rokicki, testified that the GUI was intended to look the same to the user as the GUI a user would have seen using a traditional snapshot program. CITE. According to EMC, this claim limitation covers a GUI that displays event markers corresponding to pseudosnapshots. Dr. Zadok argues that for this limitation, the GUI must be configured to display the event markers as though they were traditional snapshots. (Tr. at 1147:21–1148:3.) Therefore, Zerto contends its software does not infringe this limitation, because it presents Checkpoints not as traditional snapshots, but as markers corresponding to points in time. Sufficient evidence supports both parties’ contentions on this limitation. Because a reasonable jury could find that the ZVR software does not satisfy the “GUI” limitation required by claim 1, the court denies EMC’s motion as to infringement of the ’395 patent.

c. Contributory Infringement

The parties’ arguments on contributory infringement largely mirror those for the ’460 patent. As the court noted above, substantial evidence supports the jury’s conclusion that Zerto had the requisite knowledge of infringement. Zerto presents one additional argument here: that a reasonable jury could have found a substantial noninfringing use. As evidence, Zerto points to one VSS-aware application, Oracle, that Zerto contends does not stop generating write operations after receiving instructions from VSS. Even if the jury credited Zerto’s restrictive view of the claim language, and accepted its argument that a customer using Oracle does not infringe, the record lacks sufficient evidence to support a finding that this is a substantial noninfringing use, especially

in light of the strong evidence that VSS-aware applications satisfy the “quiescent state” limitation. The court finds a substantial noninfringing use is not supported by the record. Accordingly, the court denies Zerto’s motion as to noninfringement of the ’395 patent.

4. EMC’s JMOL Motion for Infringement and Zerto’s JMOL Motion for Noninfringement of the ’091 Patent

The jury found that Zerto contributorily infringed dependent claim 5 of the ’091 patent, but did not infringe independent claim 1. Zerto requests judgment of noninfringement as to claim 5, and EMC requests judgment of infringement as to claim 1. The parties dispute three issues: whether ZVR meets the “quiescent state” limitation, whether ZVR meets the “remote server” limitation, and whether Zerto contributorily infringed the patent. The “quiescent state” limitation is identical to that for the ’395 patent. As discussed previously, the court finds that a reasonable jury could only conclude that at least one of Zerto’s customers satisfied the “quiescent state” element.

a. “Remote Server” Limitation

To satisfy this limitation, EMC must have proved that at least one Zerto customer operated ZVR with two Zerto Virtual Machines (“ZVMs”). EMC produced strong circumstantial evidence to the affirmative. Mr. Jestice showed the jury a Zerto price sheet advertising a ZVR software package that includes two ZVMs, as well as Zerto technical documents describing the use of a second ZVM. (Tr. at 381:18–382:17; PTX-0612; PTX-0543 at ZERTO_56280.) Mr. Jestice also explained that two Zerto customers (UGL Unnico and Rapidparts) had two sites, and therefore likely also used two ZVMs. (*Id.* at 560:18–561:4.) In addition, EMC disclosed an email from Zerto’s CTO, Mr. Odem Kedem, indicating a large portion of Zerto’s customers make and use a system that includes a remote server. (*Id.* at 1292:1–1293:8.) In response, Zerto argues that EMC

has not directly shown that at least one customer used a remote server. But the only reasonable inference a jury could draw from the evidence on record is in favor of EMC. The court therefore concludes that the jury did not act reasonably when it found that claim 1 of the '091 patent is not directly infringed by at least one of Zerto's customers.

b. Contributory Infringement

Because the evidence requires a finding of direct infringement of claims 1 and 5, the final question is whether Zerto contributed to that infringement. The evidence regarding contributory infringement is largely the same as for the '460 patent. The court finds that a reasonable jury could find that Zerto had the requisite knowledge for contributory infringement. Zerto also argues that the use of only one ZVM rather than two qualifies as a substantial noninfringing use. The evidence does not support Zerto's position. Zerto provided almost no evidence to indicate that its customers operate in this noninfringing state. The jury reasonably found that Zerto contributed the infringement of claim 5 of the '091 patent, and that finding applies with equal force to claim 1.

In conclusion, the court finds that the jury's verdict of contributory infringement of claim 5 is supported by evidence on the record, but the jury's verdict of noninfringement of claim 1 is not. Accordingly, the court grants EMC's motion for judgment as a matter of law as to infringement of the '091 patent, and denies Zerto's motion as to noninfringement of the '091 patent.

5. Zerto's JMOL Motion for Noninfringement of the '867 Patent

Zerto contends that its ZVR software does not infringe claim 45 of the '867 patent. Zerto argues that no reasonable jury could have found that: Zerto had infringing computer readable media; Zerto's software halts host device controllers; or Zerto uses a journal to roll back a duplicate

storage system. The court concludes that substantial evidence in the record supports the jury's finding that Zerto directly infringes all elements of claim 45.

First, the jury could have reasonably concluded that Zerto maintained "a computer readable medium storage program code." Zerto disputes that it ever had a copy of the VSS Agent software, which is required to satisfy this element. But EMC produced evidence that Zerto's customers download the VSS Agent software from Zerto's website, that the Zero Virtual Manager Administration Guide instructs users to access the "Zerto Support Portal downloads page," and that installation of the software includes a license agreement between the user and Zerto. (Tr. 388:8–23; D.I. 247, Ex. 12 at ZERTO_56097.) Zerto argues that website, and therefore the VSS Agent software, is maintained by Amazon.com. (Tr. 903:12–19.) Still, a jury could have inferred that Zerto had control over the software.

Second, the jury could have reasonably concluded that Zerto software "cause[s] host device controllers . . . to halt processing I/O requests." Mr. Jestice provided thorough testimony regarding this limitation. He explained that when a user creates a VSS checkpoint, ZVR causes an application to become frozen, and a frozen application no longer sends I/O requests. (Tr. at 396:5–399:8.) A jury could have credited Mr. Jestice's testimony and found that by preventing I/O requests from being sent to the host device controller, the ZVR software causes the host device controller to halt processing the requests. The court declines Zerto's invitation to impose a narrower claim construction to overturn the jury's interpretation of plain and ordinary meaning. *See Hewlett-Packard Co. v. Mustek Sys., Inc.* 340 F.3d 1314, 1320–21 (Fed. Cir. 2003).

The jury could have reasonably concluded that Zerto rolls back a duplicate storage system. Mr. Jestice demonstrated how ZVR's Test Failover operation rolls data back to a previous point in time. (Tr. at 391:11–18.) This testimony was corroborated by Zerto webinars featuring Zerto's

Director of Product Marketing, Jennifer Gill. (*Id.* at 1365:3–1366:22.) The jury could have credited this evidence and rejected Zerto’s arguments to the contrary.

The court concludes that substantial evidence on the record supports the jury’s finding that Zerto literally infringes claim 45 of the ’867 patent. The court denies Zerto’s motion as to noninfringement of the ’867 patent.

C. EMC’s Motion for Permanent Injunction

EMC seeks a permanent injunction against Zerto’s infringing ZVR software. In appropriate cases, a district court may grant an injunction as an equitable remedy for patent infringement. 35 U.S.C. § 283. A plaintiff seeking a permanent injunction “must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as money damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and the defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.” *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391, 126 S.Ct. 1837, 1839, 164 L.Ed. 2d 641 (2006). Applying the equitable factors to the facts of this case, the court concludes that a permanent injunction is not warranted.

To establish irreparable harm, EMC argues that Zerto’s infringement has caused it to lose market share, experience price erosion, lose future downstream sales, and diminished its reputation as an innovator. EMC also argues that Zerto may be unable to pay the judgment.

EMC depicts Zerto as its direct and only competitor in the “hypervisor-based replication market.” The court finds that this characterization unreasonably narrows the market of data protection systems, which is highly competitive and includes many players. Certainly, Zerto aggressively competes with EMC (*see* Tr. at 571:14–583:3), but Zerto is not the only competitor EMC faces. The record shows that EMC has lost customers to Zerto. (D.I. 229, Ex. S.) EMC also

reports losing several sales opportunities (D.I. 228 at ¶¶23–24), but EMC has not shown that if Zerto had not made those sales, those customers would definitely have gone to EMC. EMC does not address how other competitors affect its market share.

EMC contends that it is losing revenue from downstream sales and services. EMC also provided evidence that Zerto's competition forced it to reduce prices for its product, RecoverPoint for VMs. (*Id.* at ¶¶ 28–34.) The court notes that when RecoverPoint for VMs entered the market, EMC initially priced it substantially higher than Zerto's three-year-old product. There is no evidence customers would have been willing to pay EMC's original price for that product if Zerto had not already been in the market. This cuts against a finding of price erosion.

A finding of irreparable harm requires a causal nexus between the patent infringement and the alleged injury. The nexus analysis is a flexible, fact-based inquiry. *Apple, Inc. v. Samsung Elecs. Co.*, 809 F.3d 633, 641 (Fed. Cir. 2015). A patent owner can show a nexus by providing evidence that infringing features make the defendant's product more desirable. *Id.* at 642. The court finds a causal nexus exists between Zerto's infringement and EMC's harm. Zerto markets some of the patented features as advantages of its product. (D.I. 229, Ex G at EMC_7162, Ex. V at EMC_195721, Ex. R at EMC_194852.) Although these features may not be the main drivers of product sales, it is enough that they are one factor in a potential customer's decision.

The court is unpersuaded by EMC's final arguments that Zerto has harmed its reputation as an innovator and that Zerto may not be able to pay the judgment. The record does not support either contention. Considering all of these facts, the court finds the irreparable harm factor weighs slightly in favor of EMC.

EMC argues that a monetary award would be inadequate to compensate it for its loss. The court disagrees. EMC's supporting evidence for this factor largely overlaps with the evidence used

to show irreparable harm. Although EMC does suffer competitive harm, this harm is quantifiable. For example, a per-virtual machine royalty structure would account for any lost licensing revenue from additional sales. The parties could surely use their experience in the market to project other lost downstream revenue and determine a compensation algorithm. Although EMC tends not to grant patent licenses, the evidence shows it has licensed the patents at issue to several of its competitors. (Tr. at 701:11–703:3, 727:9–729:8.) Overall, the court finds that money damages would be adequate to compensate EMC for its injury. This weighs against awarding an injunction.

As for the third factor, the balance of hardships clearly favors Zerto. In determining the balance of hardships, the court considers “the parties’ sizes, products, and revenue sources.” *i4i Ltd. v. Microsoft Corp.*, 598 F.3d 831, 862 (Fed. Cir. 2010). The products EMC targets with this injunction comprise the entirety of Zerto’s business. In contrast, the lost sales EMC identifies represent about 0.001% of its annual revenues. This factor weighs strongly against awarding an injunction.

The final factor, public interest, weighs slightly in EMC’s favor. In any patent case, the public has an interest in promoting innovation and enforcing patent rights. This interest would also be served through a compulsory license. This public policy, however, is not strong enough to carry an injunction here. Considering and weighing all of the factors, the court finds that a permanent injunction is not warranted in this case.

D. EMC’s Motion for an Accounting and to Amend the Judgment

In its motion, EMC seeks to amend the judgment to include: (1) an accounting of pre-verdict infringing sales not included in the jury’s damages award (between April 22, 2015 and May 8, 2015), (2) an accounting of infringing sales that occurred after the jury’s verdict, (3) an enhancement of damages awarded for infringing sales that occurred after the jury’s verdict, (4)

pre-judgment interest on all pre-judgment damages, and (5) post-judgment interest on the total damages awarded to EMC.

1. Pre-judgment Sales and Interest

The court will order that the judgment be amended to include an accounting of any infringing sales made between April 22, 2015 and May 8, 2015. The court also grants EMC's motion regarding pre-judgment interest on the total damages award. District courts have discretion in determining the applicable interest rate for an award of pre-judgment interest. *Studiengesellschaft Kohle, m.b.H. v. Dart Indus., Inc.*, 862 F.2d 1564, 1580 (Fed. Cir. 1988). "Courts have recognized that the prime rate best compensate[s] a patentee for lost revenues during the period of infringement because the prime rate represents the cost of borrowing money, which is 'a better measure of the harm suffered as a result of the loss of the use of money over time.'" *IMX, Inc. v. LendingTree, LLC*, 469 F. Supp. 2d 203, 227 (D. Del. 2007) (citing *Mars, Inc. v. Conlux USA Corp.*, 818 F. Supp. 707, 720–21 (D. Del. 1993), *aff'd*, 16 F.3d 421 (Fed. Cir. 1993)). The court accordingly will order Zerto to pay pre-judgment interest at the prime rate, compounded quarterly.

2. Post-judgment Sales and Interest

Given the court's denial of EMC's motion for a permanent injunction, EMC is entitled to an ongoing royalty covering all infringing sales made after May 8, 2015. The court denies the remainder of EMC's motion without prejudice and directs the parties to engage in mediated negotiations regarding an appropriate royalty.⁹ If the parties are unable to reach an agreement by

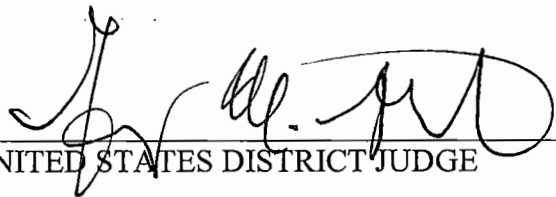
⁹ The court follows the Federal Circuit's guidance in this area: "In most cases, where the district court determines that a permanent injunction is not warranted, the district court may wish to allow the parties to negotiate a license amongst themselves regarding future use of a patented invention before imposing an ongoing royalty. Should the parties fail to come to an agreement, the district court could step in to assess a reasonable royalty in light of the ongoing infringement." *Paice LLC v. Toyota Motor Corp.*, 504 F.3d 1293, 1315 (Fed. Cir. 2007)

June 30, 2105, EMC may file a renewed motion for an ongoing royalty covering post-judgment sales.

V. CONCLUSION

For the reasons stated above, the court will: (1) deny all of Zerto's post-trial motions; (2) partially grant EMC's renewed JMOL motion; (5) deny EMC's motion for a permanent injunction; and (6) partially grant EMC's Motion to Amend the Judgment (D.I. 223).

Dated: March 31, 2016


UNITED STATES DISTRICT JUDGE